

Remarks

Favorable reconsideration of this application, in view of the above amendments and in light of the following remarks and discussion, is respectfully requested.

Claims 1, 2, 5, 6, and 31-38 are currently pending in the application; Claims 1, 5, and 6 having been amended, Claims 3, 4, and 7-30 having been canceled without prejudice or disclaimer, and new dependent Claims 31-38 having been added, by way of the present response. Applicants respectfully assert that support for the changes to the claims is self-evident from the originally filed disclosure, including the original claims, and that therefore no new matter has been added.

Initially, Applicants express thanks for the courtesies extended by Examiner Paik to Applicants' representative during a personal interview on May 18, 2004. Applicants respectfully assert that the following, with the Examiner's Interview Summary, includes the substance of the interview, pursuant to MPEP § 713.04.

In the outstanding Office Action Claims 1-5, 8-14, and 16-19 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,217,570 to Holmes; Claims 1-3, 5, 8, 12-16, 18, and 20-22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,851,298 to Ishii in view of U.S. Patent No. 5,616,024 to Nobori et al. (Nobori) or U.S. Patent No. 6,133,557 to Kawanabe et al. (Kawanabe); Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishii in view of Nobori or Kawanabe, and further in view of U.S. Patent No. 4,449,039 to Fukazawa et al. (Fukazawa); Claims 6, 7, 24, and 26-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,080,970 to Yoshida et al. (Yoshida) or Kawanabe in view of U.S. Patent No. 6,423,400 to Yushio et al. (Yushio); Claims 23 and 30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshida or Kawanabe in view of Yushio, and further in view of Nobori; and Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshida or

Kawanabe in view of Yushio, and further in view of Fukazawa. Applicants respectfully assert that the amendments to the claims have overcome the rejections for the following reasons.

The present invention is directed to ceramic heaters. Independent Claim 1 recites a ceramic substrate including a heating face configured to heat a wafer. An insulating layer has a thickness of between 0.1 and 1000 μm and a volume resistivity higher than that of the ceramic substrate and is disposed on a surface of the ceramic substrate. A resistance heating element is disposed on an opposite side of the heating face and is disposed on the insulating layer. Independent Claim 6 recites a ceramic substrate including a heating face, the ceramic substrate warped in one direction. A supporting pin is disposed in the heating face. A resistance heating element is disposed on a surface of the ceramic substrate and is disposed on an opposite side of the heating face.

Regarding the rejection of independent Claim 1, Holmes is directed to thin-film microcircuits adapted for laser trimming. As discussed during the interview, and as agreed to by the Examiner, Applicants respectfully assert that Holmes does not teach, however, the claimed features of a ceramic substrate including a heating face configured to heat a wafer, as recited in independent Claim 1.

Specifically, independent Claim 1 recites “a ceramic substrate comprising a heating face configured to heat a wafer.” Thus, Applicants respectfully request that the rejection of independent Claim 1 under 35 U.S.C. § 102(b) be withdrawn.

Ishii is directed to a susceptor structure for mounting processing objects. As discussed during the interview, and as agreed to by the Examiner, Applicants respectfully assert that Ishii does not teach or suggest, and the Office Action explicitly concedes that Ishii does not teach or suggest,¹ the claimed features of a ceramic substrate including a heating

¹ Page 3, lines 17 and 18 of text, of the Office Action.

face and a resistance heating element disposed on an opposite side of the heating face and disposed on an insulating layer having a thickness of between 0.1 and 1000 μm , as recited in independent Claim 1. Specifically, independent Claim 1 recites “a ceramic substrate comprising a heating face . . . [,] an insulating layer having a thickness of between 0.1 and 1000 μm . . . and a resistance heating element disposed on an opposite side of the heating face and disposed on said insulating layer.”

The Office Action relies on Nobori and Kawanabe in an attempt to remedy the deficiencies of Ishii. As discussed during the interview, and as agreed by the Examiner, Applicants respectfully assert that Nobori and Kawanabe do not remedy these deficiencies, however, for the following reasons.

As discussed during the interview, and as agreed to by the Examiner, Applicants respectfully assert that none of Nobori and Kawanabe teaches or suggests, and the Office Action does not assert that Nobori or Kawanabe teaches or suggests, the claimed features of a ceramic substrate including a heating face and a resistance heating element disposed on an opposite side of the heating face and disposed on an insulating layer having a thickness of between 0.1 and 1000 μm , as recited in independent Claim 1. Thus, Applicants respectfully request that the rejection of independent Claim 1 under 35 U.S.C. § 103(a) be withdrawn.

Applicants respectfully assert that the outstanding grounds of rejection of independent Claim 1 have been overcome for the above reasons. Therefore, Applicants respectfully request the allowance of independent Claim 1.

Regarding the rejection of independent Claim 6, as discussed during the interview, and as agreed to by the Examiner, Applicants respectfully assert that Kawanabe and Yoshida do not teach or suggest, and the Office Action explicitly concedes that Kawanabe and Yoshida do not teach or suggest,² the claimed features of a ceramic substrate including a

² Page 5, lines 8 and 9 of text, of the Office Action.

heating face, the ceramic substrate warped in one direction, a supporting pin disposed in the heating face, and a resistance heating element disposed on a surface of the ceramic substrate and disposed on an opposite side of the heating face, as recited in the independent claim.

Specifically, independent Claim 6 recites “a ceramic substrate comprising a heating face, the ceramic substrate warped in one direction . . . [,] a supporting pin disposed in the heating face . . . and a resistance heating element disposed on a surface of said ceramic substrate and disposed on an opposite side of the heating face.”

The Office Action relies on Yushio in an attempt to remedy the deficiencies of Kawanabe and Yoshida. As discussed during the interview, and as agreed to by the Examiner, Applicants respectfully assert that Yushio do not remedy these deficiencies, however, for the following reasons.

Yushio is directed to a susceptor for semiconductor manufacturing equipment. As discussed during the interview, and as agreed to by the Examiner, Applicants respectfully assert that Yushio does not teach or suggest, however, the claimed features of a ceramic substrate including a heating face, the ceramic substrate warped in one direction, a supporting pin disposed in the heating face, and a resistance heating element disposed on a surface of the ceramic substrate and disposed on an opposite side of the heating face, as recited in independent Claim 6.

Thus, Applicants respectfully request that the rejection of independent Claim 6 under 35 U.S.C. § 103(a) be withdrawn.

Applicants respectfully assert that Claims 2, 5, and 31-38 are allowable for the same reasons as the independent claims from which they depend, as well as for their own features. Thus, Applicants respectfully request that the rejections of dependent Claims 2 and 5 under 35 U.S.C. §§ 102(b) and 103(a) be withdrawn, and the allowance of dependent Claims 2, 5, and 31-38.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1, 2, 5, 6, and 31-38 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

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(OSMMN 08/03)

Respectfully submitted,

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